Blended Learning: AutoCAD® Civil 3D® Fundamentals

Course Length: 4 weeks

The AutoCAD Civil 3D Fundamentals training guide is designed for Civil Engineers and Surveyors who want to take advantage of AutoCAD® Civil 3D® software’s interactive, dynamic design functionality. The AutoCAD Civil 3D software permits the rapid development of alternatives through its model-based design tools. You will learn techniques enabling you to organize project data, work with points, create and analyze surfaces, model road corridors, create parcel layouts, perform grading and volume calculation tasks, and layout pipe networks.

Upon completion, you will be able to:

- Learn the AutoCAD Civil 3D user interface
- Create and edit parcels and print parcel reports
- Create points and point groups and work with survey figures
- Create, edit, view, and analyze surfaces
- Create and edit alignments
- Create data shortcuts
- Create sites, profiles, and cross-sections
- Create assemblies, corridors, and intersections
- Create grading solutions
- Create gravity fed and pressure pipe networks
- Perform quantity takeoff and volume calculations
- Use plan production tools to create plan and profile sheets

Prerequisites:
Experience with AutoCAD® or AutoCAD-based products (such as Autodesk® Land Desktop) and a sound understanding and knowledge of civil engineering terminology.
The following outline shows the approximate schedule for the self-study curriculum and the hands-on lab sessions.

For the duration of the course, in addition to the self-study content and the weekly lab sessions, students will have access to online tools that allow them to communicate with each other to share information and ask questions related to the course materials. The instructor will be monitoring the course discussions and will be available daily to provide individual assistance and guidance.

**Week 1**

**Lab Session - Course overview – Remote via WebEx and conference call (~1.5 hours)**
- Instructor and Student introductions
- Review goals and expectations for the class
- Review class key dates and times, deadlines, and schedule of future Lab Sessions
- Overview and Instruction on accessing and usage of the ProductivityNOW eLearning system

**Self-Study**

**Chapter 1 - The AutoCAD Civil 3D Interface**
- 1.1 Product Overview
- 1.2 AutoCAD Civil 3D Workspaces
- 1.3 AutoCAD Civil 3D User Interface
- Practice 1a Overview of AutoCAD Civil 3D and its User Interface
- 1.4 AutoCAD Civil 3D Toolspase
- 1.5 AutoCAD Civil 3D Panorama
- Practice 1b AutoCAD Civil 3D Toolspase
- 1.6 AutoCAD Civil 3D Templates, Settings, and Styles
- Practice 1c AutoCAD Civil 3D Styles
- Chapter Review Questions
Chapter 2 Project Management
- 2.1 AutoCAD Civil 3D Projects
- 2.2 Sharing Data
- 2.3 Using Data Shortcuts for Project Management
- Practice 2a Starting a Project
- Practice 2b Manage File Sizes with Data Shortcuts
- Practice 2c Share Projects with Team Members Outside the Office Network

Chapter 3 Parcels
- 3.1 Lines and Curves
- Practice 3a Beginning a Subdivision Project
- 3.2 Introduction to Parcels
- Practice 3b Create Parcels From Objects
- 3.3 Creating and Editing Parcels by Layout Overview
- 3.4 Creating and Editing Parcels
- Practice 3c Creating and Editing Parcels
- 3.5 Renumbering Parcels
- Practice 3d Rename/Renumber Parcels
- 3.6 Parcel Reports
- 3.7 Parcel Labels
- 3.8 Parcel Tables
- Practice 3e Reporting On and Annotating the Parcel Layout

Chapter 4 Survey
- 4.1 Survey Workflow Overview
- 4.2 Introduction to the Survey Toolspace
- 4.3 Survey Figures
- Practice 4a Creating Figure Prefixes
- 4.4 Points Overview
- Practice 4b Point Marker Styles
- 4.5 Point Settings
- 4.6 Creating Points
- Practice 4c Creating AutoCAD Civil 3D Points
- 4.7 Description Key Sets
- Practice 4d Creating a Description Key Set
- 4.8 Importing Survey Data
- Practice 4e Importing Survey Data
- 4.9 Point Groups
- Practice 4f Creating Point Groups
- 4.10 Reviewing and Editing Points
- Practice 4g Manipulating Points

Course description shown for Autodesk AutoCAD Civil 3D 2015. Topics, curriculum, and/or prerequisites may change depending on software version.
• 4.11 Point Reports
• Practice 4h Point Reports

**Lab Session - Remote via WebEx and conference call (~3 hours)**
- Review of Week 1 topics and Q&A
  - Lab Exercise 1
  - Lab Exercise 2
  - Lab Exercise 3
- Overview of Week 2 self-study chapters

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**Week 2**

**Self-Study**

**Chapter 5 Surfaces**
- 5.1 Surface Process
- 5.2 Surface Properties
- 5.3 Contour Data
- 5.4 Other Surface Data
- Practice 5a Creating an Existing Ground Surface
- 5.5 Breaklines and Boundaries
- Practice 5b Add Additional Data to an Existing Ground Surface
- 5.6 Surface Editing
- 5.7 Adjusting Surfaces through Surface Properties
- 5.8 Surface Analysis Tools
- Practice 5c Surface Edits
- 5.9 Surface Labels
- 5.10 Surface Volume Calculations
- 5.11 Surface Analysis Display
- Practice 5d Surface Labeling and Analysis

**Chapter 6 Alignments**
- 6.1 Roadway Design Overview
- 6.2 AutoCAD Civil 3D Sites
- 6.3 Introduction to Alignments
- Practice 6a Creating Alignments from Objects
- 6.4 Alignments Layout Tools
- Practice 6b Creating and Modifying Alignments
- 6.5 Alignment Properties
- 6.6 Labels and Tables

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• Practice 6c Alignment Properties and Labels

Chapter 7 Profiles
• 7.1 Profiles Overview
• 7.2 Create a Profile View Style
• 7.3 Create Profiles from Surface
• 7.4 Create Profile View Wizard
• Practice 7a Working with Profiles Part I
• 7.5 Finished Ground Profiles
• 7.6 Create and Edit Profiles
• Practice 7b Working with Profiles Part II
• Practice 7c Working with Profiles Additional Practice

Lab Session – Remote via WebEx and conference call (~3 hours)
• Review of Week 2 topics and Q&A
• Lab Exercise 1
• Lab Exercise 2
• Lab Exercise 3
• Overview of Week 3 self-study chapters

Week 3

Self-Study

Chapter 8 Corridors
• 8.1 Assembly Overview
• 8.2 Modifying Assemblies
• Practice 8a Creating Assemblies
• Practice 8b Creating Assemblies Additional Practice
• 8.3 Creating a Corridor
• 8.4 Corridor Properties
• Practice 8c Working with Corridors Part I
• 8.5 Designing Intersections
• Practice 8d Working with Corridors Part II
• 8.6 Corridor Surfaces
• 8.7 Corridor Section Review and Edit
• Practice 8e Working with Corridors Part III
• 8.8 Corridor Visualization
• Practice 8f Working with Corridors Part IV

Course description shown for Autodesk AutoCAD Civil 3D 2015. Topics, curriculum, and/or prerequisites may change depending on software version.
Chapter 9 Grading

- 9.1 Grading Overview
- 9.2 Feature Lines
- Practice 9a Working with Feature Lines
- 9.3 Grading Tools
- Practice 9b Create Grading Groups
- 9.4 Modifying AutoCAD Civil 3D Grading
- Practice 9c Modify Grading and Calculate Volumes

Chapter 10 Pipe Networks

- 10.1 Pipes Overview
- 10.2 Pipes Configuration
- Practice 10a Configuring Pipe Networks
- 10.3 Creating Networks from Objects
- Practice 10b Creating Pipe Networks by Objects
- 10.4 The Network Layout Toolbar
- Practice 10c Creating Pipe Networks by Layout
- 10.5 Network Editing
- Practice 10d Editing Pipe Networks
- 10.6 Annotating Pipe Networks
- Practice 10e Annotating Pipe Networks
- 10.7 Pressure Pipe Networks
- Practice 10f Create a Pressure Pipe Network

Lab Session – Remote via WebEx and conference call (~3 hours)

- Review of Week 3 topics and Q&A
- Lab Exercise 1
- Lab Exercise 2
- Lab Exercise 3
- Overview of Week 4 self-study chapters
Week 4
Self-Study

Chapter 11 Quantity Take Off/Sections
- 11.1 Sample Line Groups
- Practice 11a Creating Sections Part I
- 11.2 Section Volume Calculations
- Practice 11b Quantity Take Off Part I
- 11.3 Pay Items
- Practice 11c Quantity Take Off Part II - Integrated Quantity Takeoff
- 11.4 Section Views
- Practice 11d Creating Sections Part II

Chapter 12 Plan Production
- 12.1 Plan Production Tools
- 12.2 Plan Production Objects
- 12.3 Plan Production Object Edits
- Practice 12a Plan Production Tools I
- 12.4 Creating Sheets
- Practice 12b Plan Production Tools II
- 12.5 Sheet Sets
- Practice 12c Plan Production Tools III

Lab Session – Remote via WebEx and conference call (~3 hours)
- Review of Week 4 topics and Q&A
- Lab Exercise 1
- Lab Exercise 2
- Lab Exercise 3
- Discussion on next steps for continuing education
- Discussion on Autodesk Certification

Additional self-study content (optional)

Appendix A Additional Information
- A.1 Opening a Survey Database
- A.2 Design Data
- A.3 Autodesk Vault Overview
Cancellation Policy

The following cancellation policy shall apply to all training engagements, Live Online, Consulting Services and Dedicated/ Custom Training:

- Company reserves the right to reschedule or cancel the date, time and location of its class at any time. In the event that a Training Class is cancelled by Company, Customer is entitled to a full refund. Company shall not be responsible for any other loss incurred by Customer as a result of a cancellation or reschedule.
- For Customer cancellations when written notice is received (i) at least ten (10) business days in advance of the class, the Customer is entitled to a full refund of its payment or reschedule enrollment, (ii) less than ten (10) business days, Customer shall not be entitled to a refund, but shall receive a class credit to be used within three (3) months of the date of the original class.
- Student substitutions are acceptable with at least two (2) days prior notice to the class, provided substitution meets course prerequisites and is approved by Company’s Training Coordinator (trainingcoordinator@rand.com).
- For all Training orders, cancellation notices must be submitted to trainingcoordinator@rand.com. Company is not responsible for any error in the delivery of the email notice. In the event of any reschedule of Consulting Services and/or Dedicated/Custom Training by Customer, Company will invoice Customer for all non-cancellable travel expenses.

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To request more information or to see training locations, visit imaginit.com/contact.